Potential bioenergy and biofertiliser production from livestock waste in Mediterranean islands within Circular Bioeconomy

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**Abstract.** It is crucial that the EU plays an important role in developing a policy framework offering equality of development opportunities to all its territories, also including the Mediterranean islands, aimed at taking into account adequate measures for reducing their dependency on fossil fuels. This study evaluates the potential biogas and digestate production through the Anaerobic Digestion (AD) process of livestock manure on a selection of European Mediterranean islands: Balearic Islands, Corse, Sardinia, Sicily, Malta, Crete and Cyprus. The potential manure generation from cattle and pigs was estimated using available livestock statistical data. An estimated yearly l generation of 10.90 million tons of livestock manure with a corresponding potential biogas production of 269.28 million m3 was observed. The yearly digestate yield is calculated at 4.69 million tons. It is a by-product that is better described as a liquid biofertiliser that can replace conventional chemical fertilisers, in adherence to Circular Bieconomy (CBE) principles, while the separated solid fraction could partially replace peat as an alternative growing substrate for the soilless cultivation of Mediterranean crops.